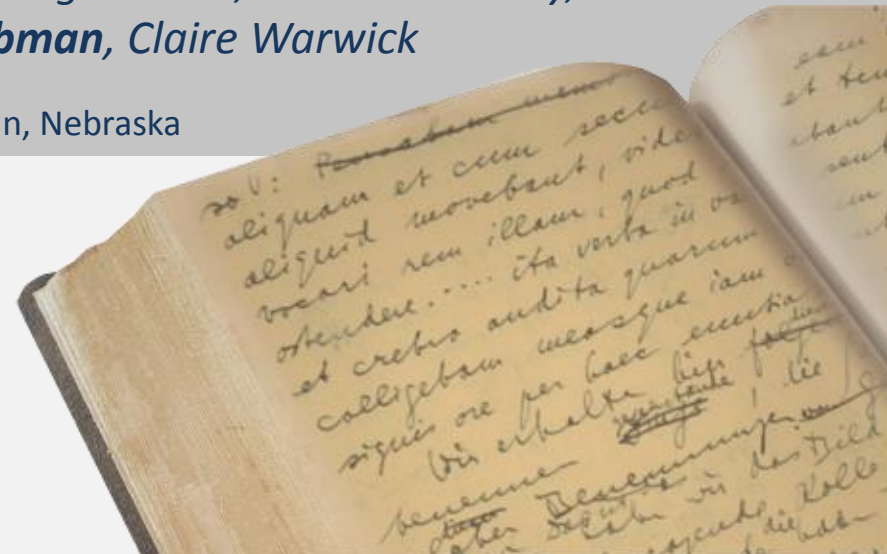


Beyond Infrastructure: Further Modeling the Scholarly Domain

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DH 2013, Lincoln, Nebraska

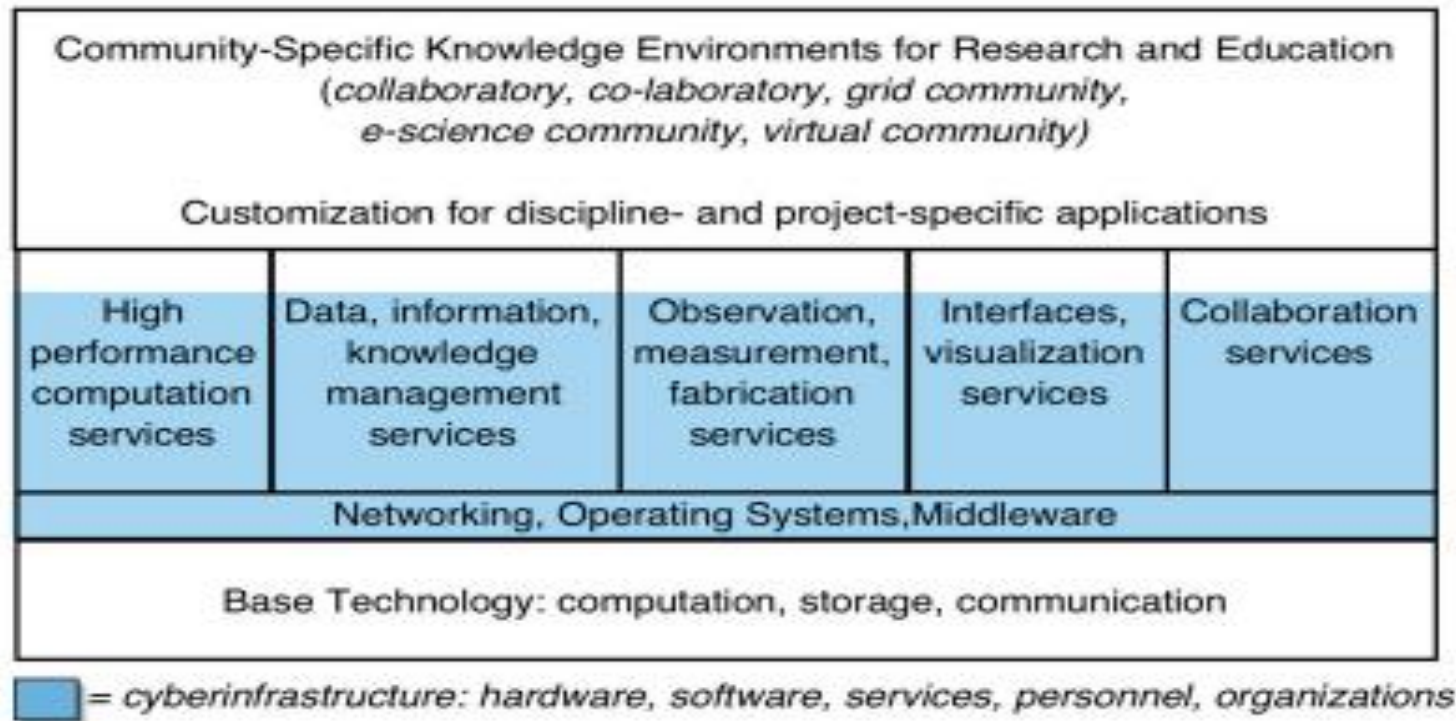


On the Menu

- Infrastructure ...
- ... and why “beyond”
- Work we’ve been building on
- The DM2E Scholarly Domain Model
- The Wittgenstein Incubator
- What can you do with all this?
- Limitations!

Infrastructure and Why Going Beyond??

Cyberinfrastructure: Atkins Report (2003)



- “Mother of all infrastructure layer cakes” impacted
 - “Our Cultural Commonwealth”, e-Science (UK), TextGrid, DARIAH
 - With Isidore, Europeana and others being more content oriented and LoD based

Why Beyond Infrastructure?

- We want to move **beyond emulation mode** ...
- ... beyond 'pages' and 'links'
- “**Research infrastructure is not research** just as roads are not economic activity. We tend to forget when confronted by large infrastructure projects that they are not an end in themselves. [...] Infrastructure projects can become ends in themselves by developing into an industry that promotes continued investment. To sustain infrastructure there develops a class of people whose jobs are tied to infrastructure investment.” Rockwell (2010)
- → how can we better **understand and model primary research activities** in order to re-implement them more thoroughly?

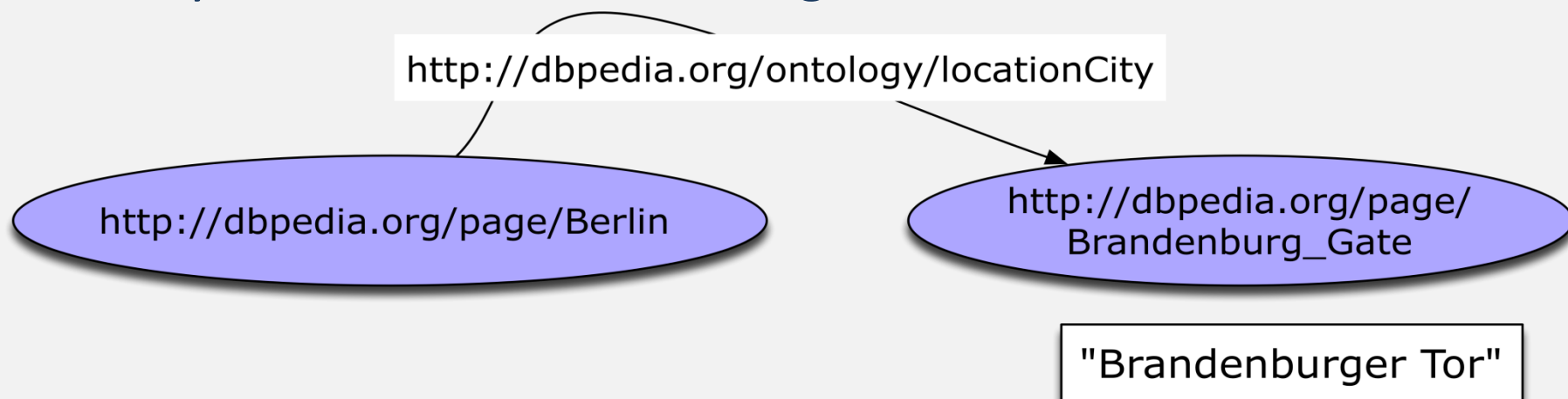
Scholarly Primitives and Dynamics

- Unsworth (2000)
 - *discovering, annotating, comparing, referring, sampling, illustrating, representing*
 - as the basis for tool-building enterprises for the Digital Humanities
- Palmer et al. (2009)(“scholarly information activities”)
 - *searching, collecting, reading, writing, collaborating*
- ... Blanke & Hedges (2011), Bamboo (2010), McCarty et. al. (2002) Anderson et al. (2010) ...
- Bernardou et al. (2010)
 - CRM activity and event based process model connecting research activities with information objects and propositions, i.e. including argumentation structures

The DM2E Scholarly Domain Model

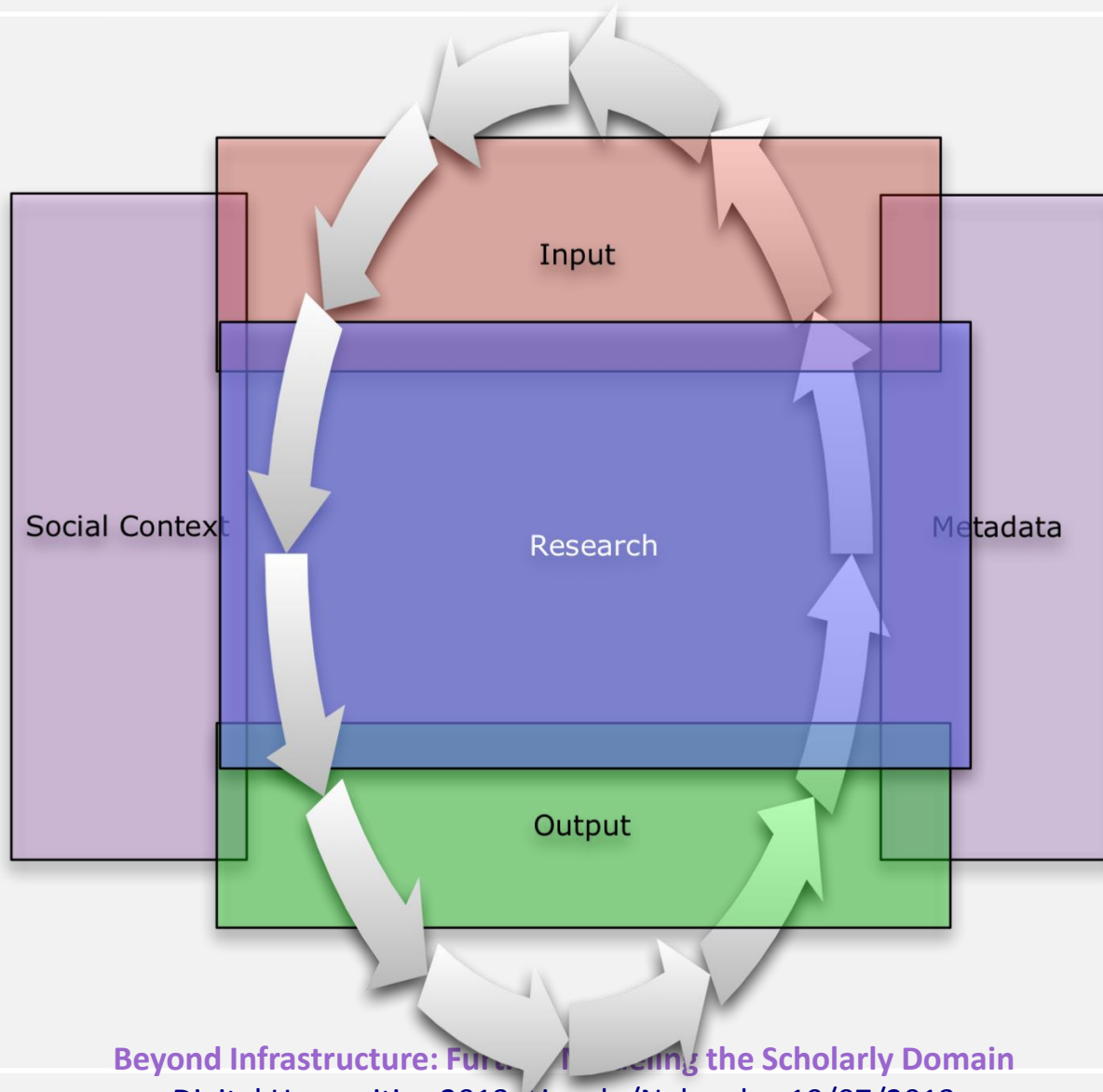
The Glue: RDF / RDFS

- Typed statements on web resources (triples) and how they relate to each other, e. g.

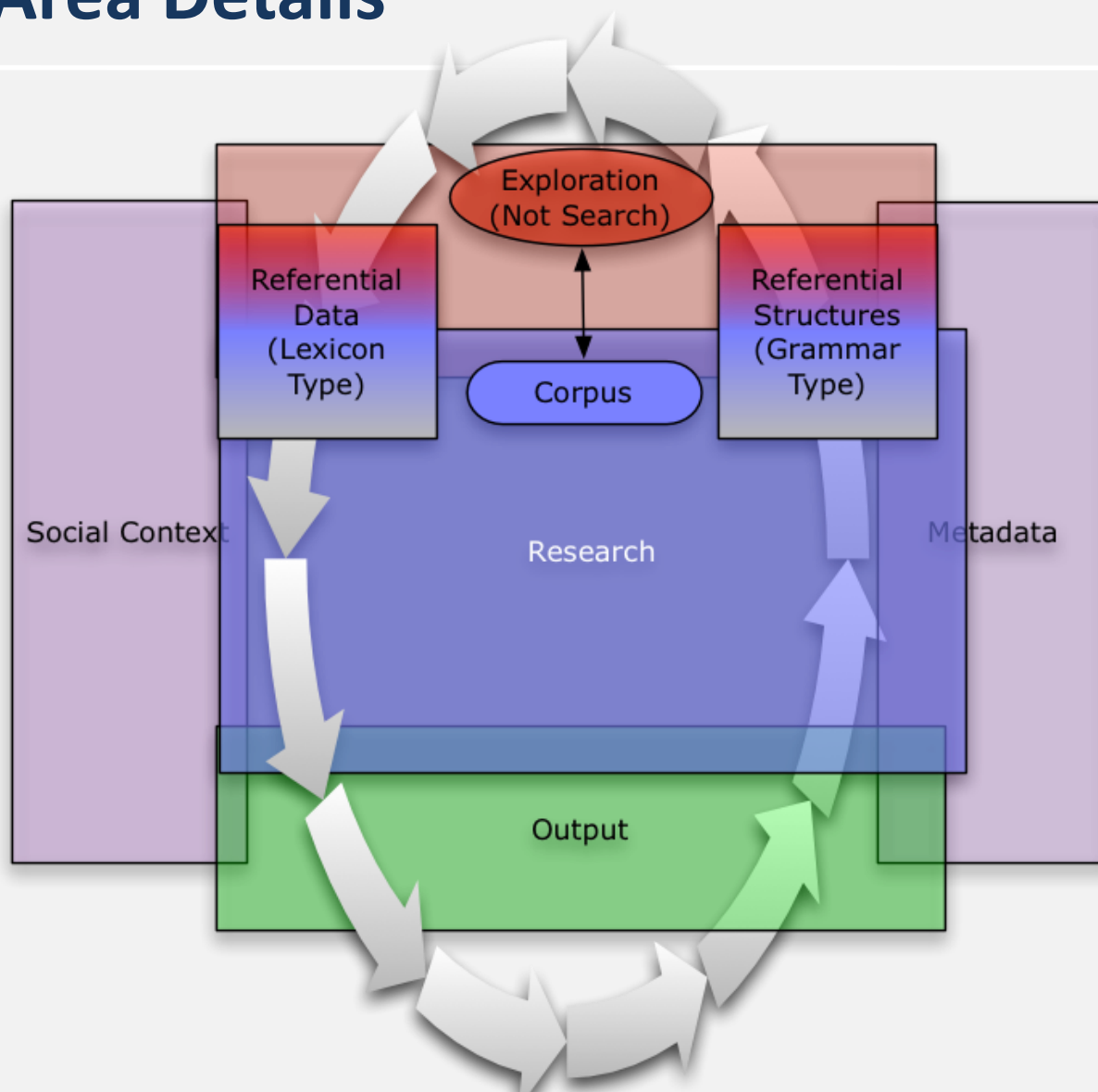


- + RDF Schema (RDFS) language with constructors for sub- and superclasses and -properties including the concept of inheritance
- → simple, deterministic logical operations on triple aggregations (“reasoning”)

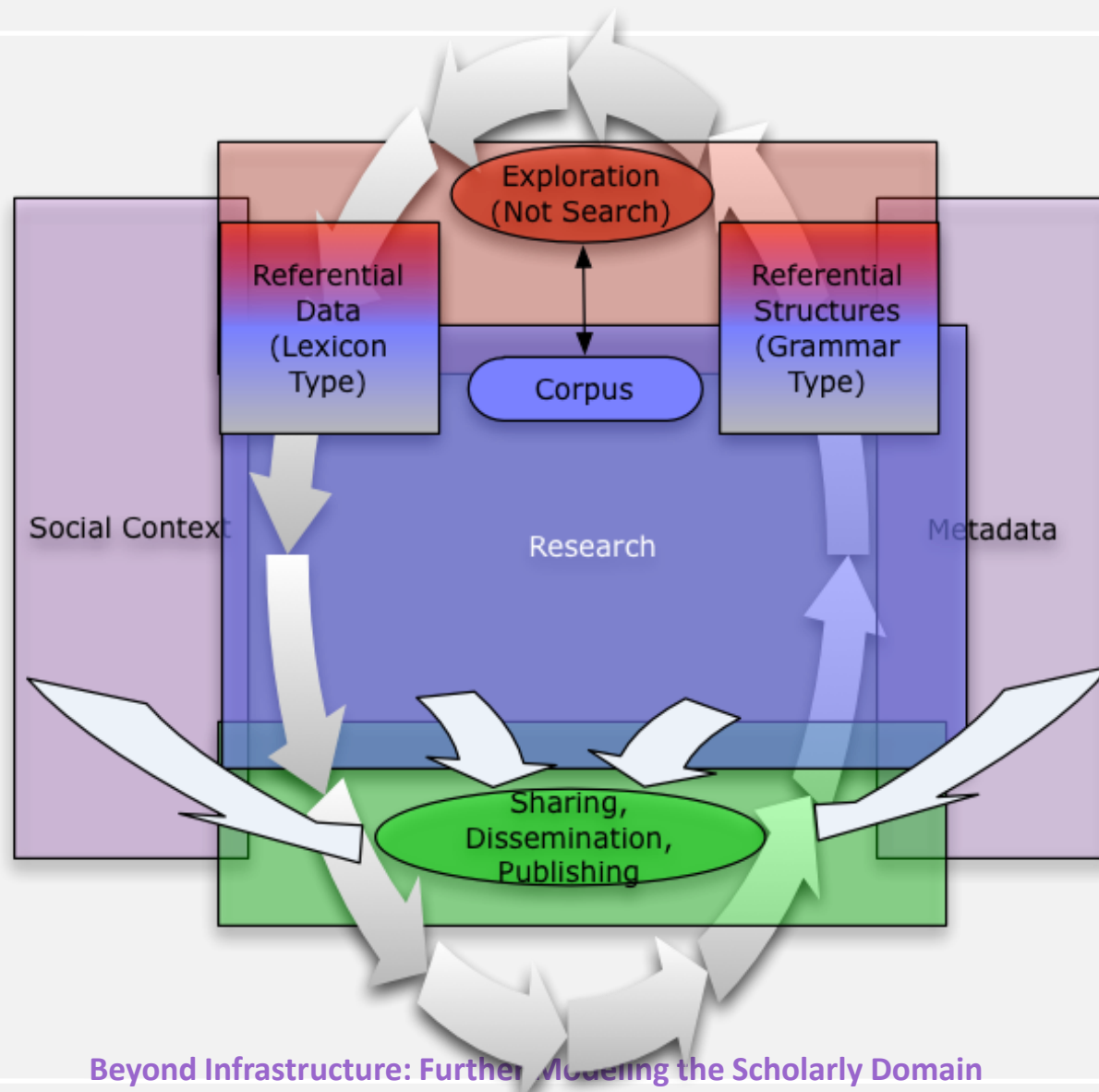
The Scholarly Domain from 10.000 feet above



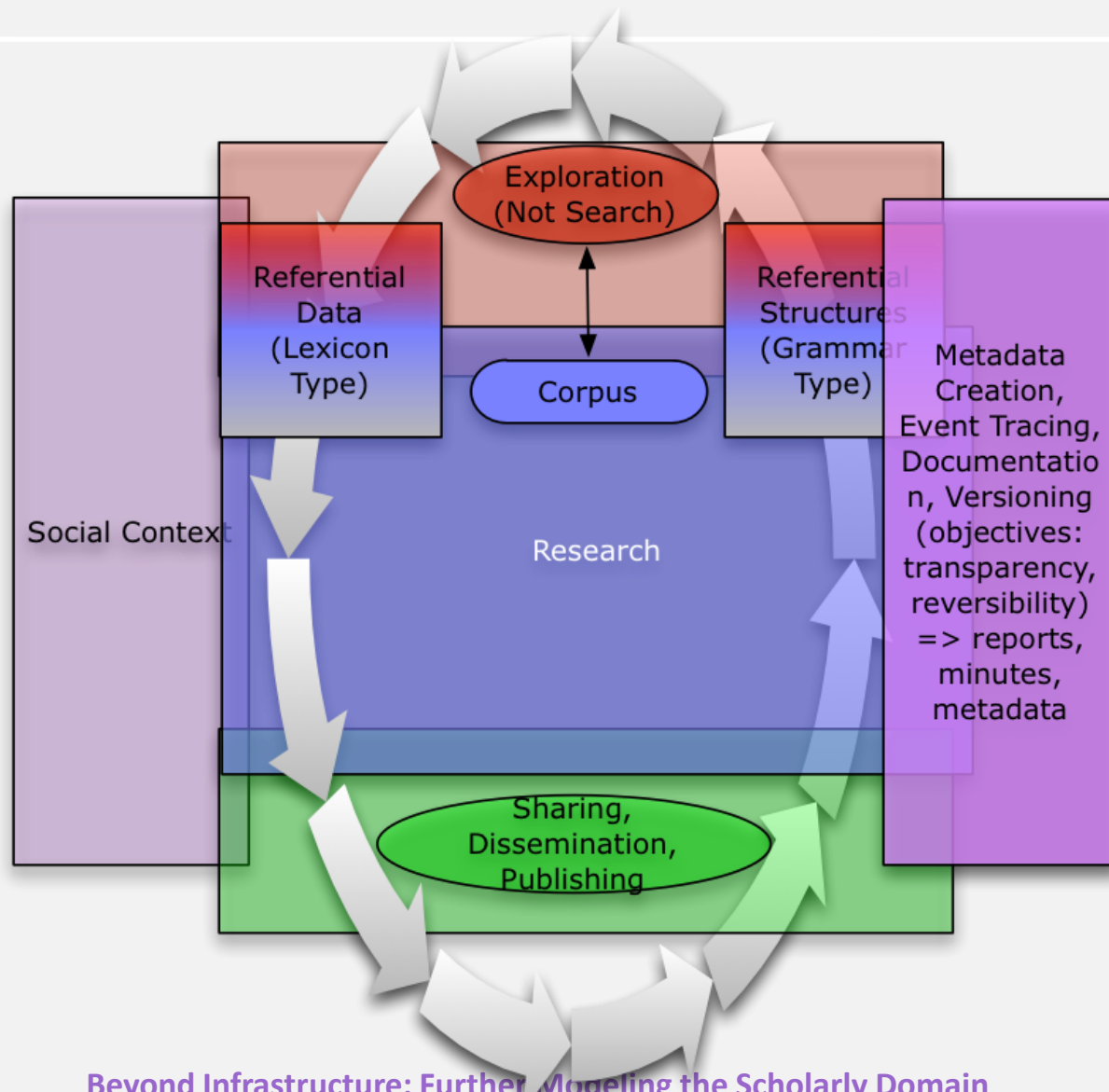
Input Area Details



+ Output

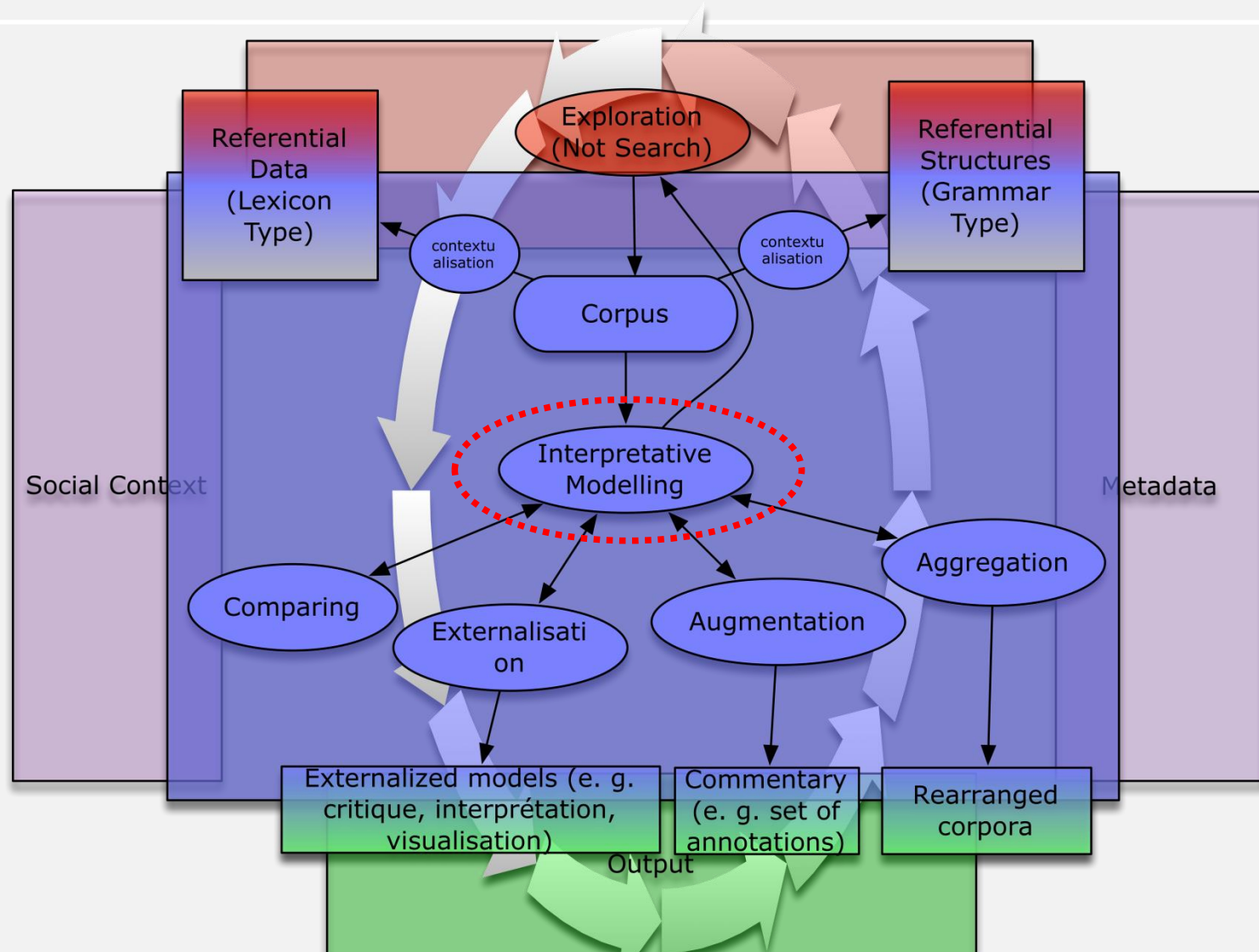


+ Metadata





Zoom on Research



The Wittenstein Incubator

Roadmap

- a) Identify the intended functional extension of the 1st Pundit & Korbo versions (→ visualisation!)
- b) Stabilise scholarly domain model
- c) Identify additional specialisations of primitives
- d) Formalise, ontologically model such specialisations
- e) Populate the DM2E platform with Wittgenstein's Brown Book and related material
- f) **Have ~10 scholars work in that environment**
- g) Analyse and model the resulting scholarly semantic graph
- h) Iterate at least once from d) (or even c)!)
 - i) Report at DH 2013

Wittgenstein Source

Wittgenstein SOURCE Privacy Credits

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DOCUMENTATION

About WittgensteinSource

SEARCH

ARCHIVE

Legend D N

Ms-114: X. Philosophische Grammatik m F D N

Ms-115: XI, Philosophische Bemerkungen m F D N

Ms-139a: Lecture on Ethics m F D N

Ms-140: Grosses Format m F D N

Ms-141 m F D N

Ms-148: C4 m F D N

Ms-149: C5 m F D N

Ms-150: C6 m F D N

Ms-152: C8 m F D N

Ms-153a: Anmerkungen m F D N

Ms-153b m F D N

Ms-154 m F D N

Ms-155 m F D N

Ms-156a m F D N

Ts-201a1: Notes on Logic m F D N

Ts-201a2: Notes on Logic m F D N

Ts-207: Lecture on Ethics m F D N

Ts-212 m F D N

Ts-213: Big Typescript m F D N

Ts-310: Brown Book m F D N

Ts-310 Facsimile

Ts-310,1 Ts-310,2

Ts-310,3 Ts-310,3a

Ts-310,4 Ts-310,5

Ts-310,6 Ts-310,7

WAB DISCOVERY (2008): Wittgenstein TS 310 G Trinity College Cambridge, Oxford University Press, University of Bergen

Suppose, in describing his learning of language, says that he was taught to speak by learning the names of things. It is clear that whoever says this has in mind the way in which a child learns such words as "man", "tiger", "table", etc. He does not primarily think of such words as "today", "but", "perhaps".

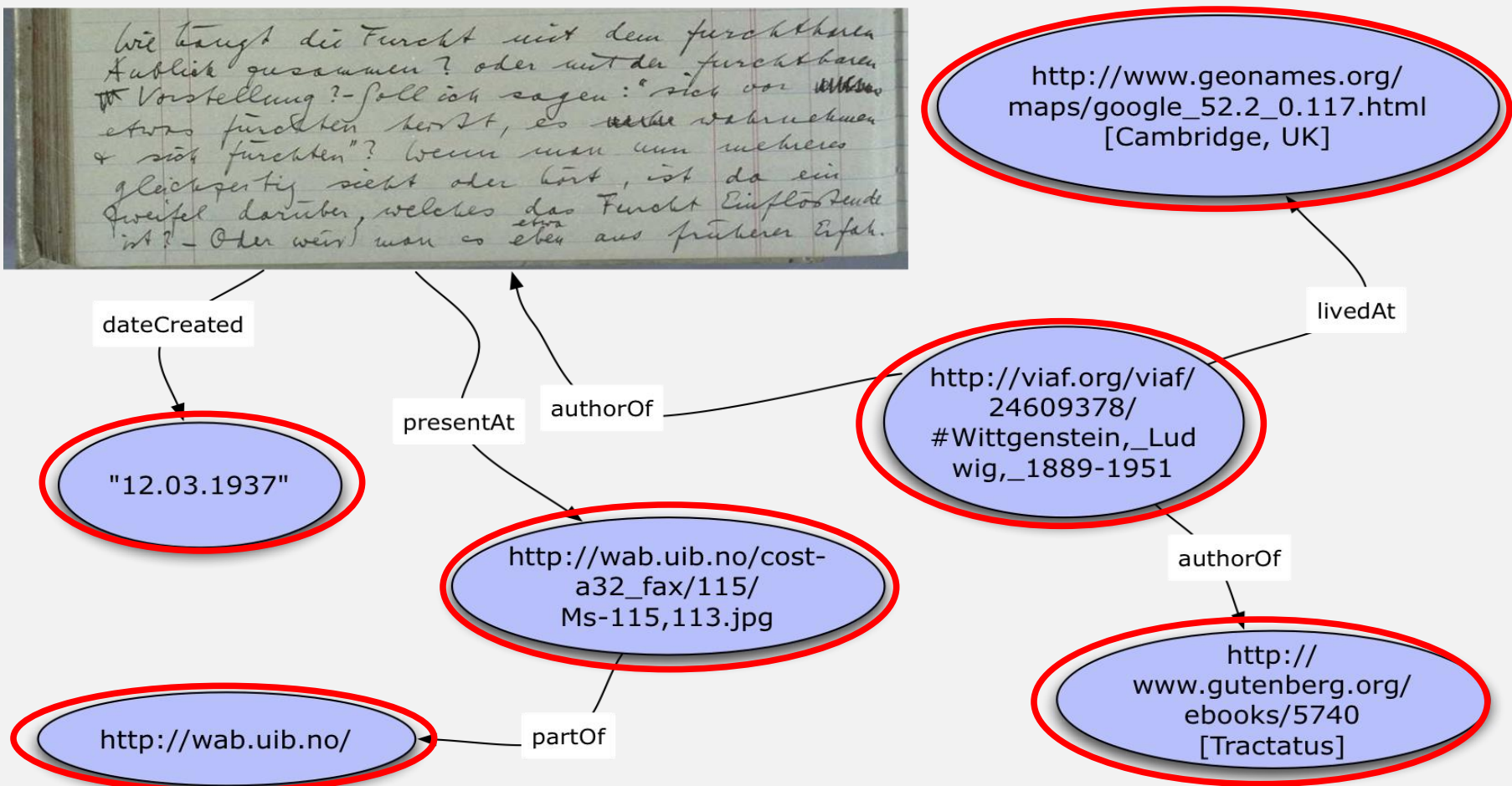
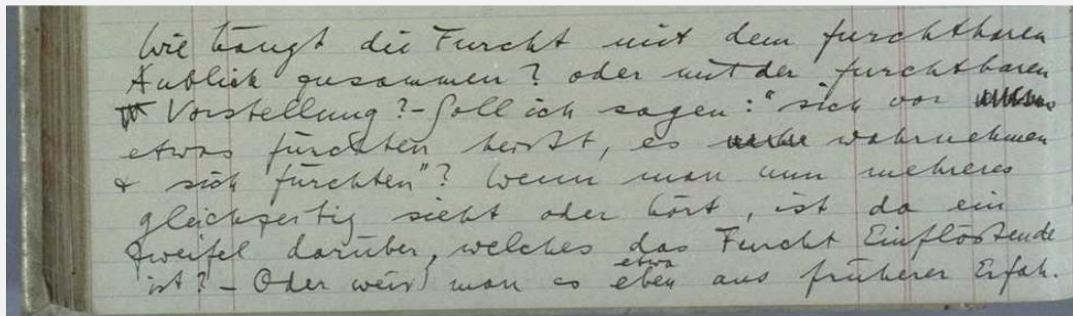
Suppose a man described a game of chess, without mentioning the existence and operations of the pawns. His description of the game as a natural phenomenon will be incomplete. On the other hand we may say that he has completely described a simpler game. In this sense we can say that Augustine's description of learning the language was correct for a simpler language than ours. Imagine this language:-

1). Its function is the communication between a builder A & his man B. B has to reach A building stones. There are cubes, bricks, slabs, beams, columns. The language consists of the words "cube", "brick", "slab", "column". A calls out one of these words, upon which B brings a stone of a certain shape. Let us imagine a society in which this is the only system of language. The child learns this language from the ground-up by being trained to its use. I am using the word "trained" in a way strictly analogous to that in which we talk of an animal being trained to do certain things. It is done by means of example, reward, punishment, and such like. Part of this training is that we point to a building stone, direct the attention of the child towards it, & pronounce a word. I will call this procedure *communicative* teaching of words. In the actual

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Beyond Infrastructure: Partner Modeling the Generality Domain

Contextualising Wittgenstein



What Can We Use This For ... And Which are the Limitations?

Create and Visualise Graph Models

[Graph of Thinkers \(is this one really useful?\)](#)

[Graph of Thinkers II](#)

[Philosophers Edgemap](#)

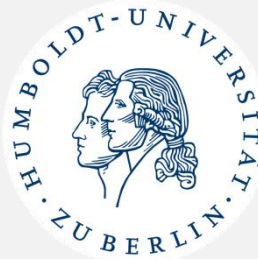
[Relfinder](#)

[Texttexture \(nonlinear reading version of this paper\)](#)

Expected Results and Limitations

- A **Social Semantic Scholarly Graph**
 - Enabling **interaction** (via Pundit and Edgemaps/LODLive)
 - Enabling **heuristic operations** (building on RDFS inference)
 - As an **object of scholarly study** (graph evolution modeling requires named graph based extensions for **versioning**, **provenance**, **authorisation** et.)
- **Ontology components** for modeling scholarly discourse and interaction
 - Beware: “The limits of my language mean the limits of my world.” Tractatus, 5.6
- And, most importantly, Tractatus, 7: “Whereof one cannot speak, thereof one must be silent.”

Parties Involved



Beyond Infrastructure: Further Modeling the Scholarly Domain
Digital Humanities 2013, Lincoln/Nebraska, 19/07/2013

Questions?

(Everything but “What is Modeling?”)